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(21) International Application Number: PCT/SE99/00310 (22) International Filing Date: 2 March 1999 (02.03.99) (30) Priority Data: 9800665-3 2 March 1998 (02.03.98) SE (71) Applicant (for all designated States except US): MICRONIC LASER SYSTEMS AB [SE/SE]; P.O. Box 3141, S-183 03 Täby (SE). (72) Inventor; and (75) Inventor/Applicant (for US only): SANDSTRÖM, Torbjörn [SE/SE]; Banvägen 56, S-435 43 Pixbo (SE). (74) Agent: AWAPATENT AB; P.O. Box 11394, S-404 28 Göteborg (SE).		(81) Designated States: AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, EE (Utility model), ES, FI, FI (Utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>

(54) Title: IMPROVED PATTERN GENERATOR**(57) Abstract**

The present invention relates to an apparatus for creating a pattern on a workpiece sensitive to radiation, such as a photomask, a display panel or a microoptical device. The apparatus comprises a radiation source and a spatial modulator (SLM) having a multitude of modulating elements (pixels). It further comprises an electronic data processing and delivery system feeding drive signals to the modulator, a precision mechanical system for moving said workpiece and an electronic control system coordinating the movement of the workpiece, the feeding of the signals to the modulator and the intensity of the radiation, so that said pattern is stitched together from the partial images created by the sequence of partial patterns. According to the invention the drive signals can set a modulating element to a number of states larger than two.

